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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,438	12/15/2003	Andrew S. Hildebrant	10030775-1	3423

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EXAMINER

RIZK, SAMIR WADIE

ART UNIT PAPER NUMBER

2133

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/736,438	Applicant(s) HILDEBRANT ET AL.	
	Examiner Sam Rizk	Art Unit 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- Response to the applicant's application dated 12/15/2003
- Claims 1-32 have been submitted for examination
- Claims 1-32 have been rejected

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Necoechea et al. US patent no. 6560756 (Hereinafter Necoechea).
2. In regard to claim 1, Necoechea teaches:
 - A method for adaptively compressing test data to be provided to a device under test (DUT), the method comprising the steps of:
 - examining a test data file that includes a first plurality of data units corresponding to a first plurality of DUT pins and a second plurality of data units corresponding to a second plurality of DUT pins;

(Note: FIG. 3 and col. 4, lines (61-67) in Necoechea)

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- compressing the first plurality of data units using a first compression technique; and

(Note: FIG. 2, reference character (201) and col. 3, lines (51-55) in Necoechea)

- compressing the second plurality of data units using a second compression technique.

(Note: FIG. 2, reference character (202) and col. 3, lines (51-55) in Necoechea)

3. In regard to claim 2, Necoechea teaches:

- The method of claim 1, further comprising, prior to the steps of compressing:
- determining a timing complexity for the first plurality of data units; and
- determining a timing complexity for the second plurality of data units.

(Note: col. 6, lines (6-15) Necoechea)

4. In regard to claim 3, Necoechea teaches:

- The method of claim 1, wherein the first plurality of data units corresponds to clock signals and the second plurality of data units corresponds to non-clock signals.

(Note: col. 1, lines (45-60) in Necoechea)

5. In regard to claim 4, Necoechea teaches:

- The method of claim 1, wherein compressing the first plurality of data units by a predetermined compression rate requires more resources

than compressing the second plurality of data units by the predetermined compression rate.

(Note: col. 1, lines (45-60) in Necoechea)

6. In regard to claim 5, Necoechea teaches:

- The method of claim 1, wherein the first plurality of data units have a different timing complexity than the second plurality of data units.

(Note: col. 1, lines (45-60) in Necoechea)

7. In regard to claim 6, Necoechea teaches:

- The method of claim 1, wherein the first plurality of data units have a different vector data volume than the second plurality of data units.

(Note: col. 8, lines (41-51) in Necoechea)

8. In regard to claim 7, Necoechea teaches:

- The method of claim 1, wherein the first plurality of data units have more repetitive data patterns than the second plurality of data units.

(Note: col. 8, lines (41-51) in Necoechea)

9. In regard to claim 8, Necoechea teaches:

- The method of claim 1, wherein the first plurality of DUT pins are clock-pins and the second plurality of DUT pins are non-clock-pins.

(Note: col. 1, lines (45-60) in Necoechea)

11. In regard to claim 9, Necoechea teaches:

- The method of claim 1, further comprising the step of:

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- formatting the first plurality of data units independently from the second plurality of data units.

(Note: FIG.2, reference characters (203) and (204) in Necoechea)

12. In regard to claim 10, Necoechea teaches:

- The method of claim 1, wherein the test data file is one of a STIL (standard test interface language) file and a WGL (waveform generation language) file.

(Note: col. 1, lines (40-45) in Necoechea)

13. In regard to claim 11, Necoechea teaches:

- The method of claim 1, wherein at least one processor operating in a first timing domain enables the first plurality of data units to be provided to the first plurality of DUT pins, and at least one processor operating in a second timing domain enables second plurality of data units to be provided to the second plurality of DUT pins, wherein the second timing domain is different from the first timing domain.

(Note: FIG. 4 in Necoechea)

14. In regard to claim 12, Necoechea teaches:

- A method for adaptively compressing test data to be provided to a device under test (DUT), the method comprising the steps of

(Note: FIG. 3 and col. 4, lines (61-67) in Necoechea)

- examining a test data file that includes test data configured to enable testing the DUT, the test data file including a first plurality of data units

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and a second plurality of data units, the first plurality of data units corresponding to a first plurality of DUT pins, and the second plurality of data units corresponding to a second plurality of DUT pins;

(Note: FIG. 2, reference character (201) and (202) and col. 3, lines (51-55) in Necoechea)

- determining that the first plurality of data units have a first compressibility characteristic; and
- determining that the second plurality of data units have a second compressibility characteristic.

(Note: col. 6, lines (6-15) Necoechea)

15. Claims 13, 25 and 29 are rejected for the same reasons as per claim 9.
16. Claims 14, 24 and 30 are rejected for the same reasons as per claim 8.
17. Claims 15, 26 and 31 are rejected for the same reasons as per claim 10.
18. Claims 16, 21 and 32 are rejected for the same reasons as per claim 5.
19. Claim 17 is rejected for the same reasons as per claim 1.
20. Claim 18 is rejected for the same reasons as per claim 2.
21. Claim 19 is rejected for the same reasons as per claim 3.
22. Claim 20 is rejected for the same reasons as per claim 4.
23. Claim 22 is rejected for the same reasons as per claim 6.
24. Claim 23 is rejected for the same reasons as per claim 7.
25. Claim 27 is rejected for the same reasons as per claim 11.
26. Claim 28 is rejected for the same reasons as per claim 12.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

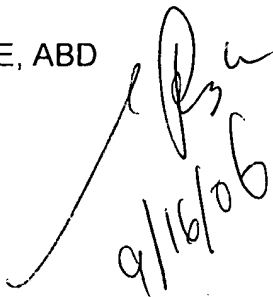
- Rajski et al US publication no. 2005/0097419 teaches method and apparatus for selectively compacting test responses.
- Ochoa et al. US patent no. 6546512 teaches semiconductor integrated circuit having compression circuitry for compressing test data.
- Turnquist et al US patent no. 5883906 teaches pattern data compression and decompression for semiconductor test system
- Bhatia US publication no. 2004/0237014 teaches test compaction using linear matrix driven scan chains.
- Barnhart US patent no. 6795944 teaches testing regularly structured logic circuits in IC.
- Toumiya US patent no. 6751767 teaches test pattern compression method,
- Rajsuman et al. US publication no. 2003/0217343 teaches manufacturing method and apparatus to avoid prototype hold in ASIC/SOC manufacturing.
- Behrens et al US patent no. 5499248 teaches test vector generator comprising a decompression control unit and conditional vector processing unit and a method for generating a test vector.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Rizk whose telephone number is (571) 272-8191. The examiner can normally be reached on M-F 8-5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronics Business Center (EBC) at 866-217-9197 (toll-free)

Sam Rizk, MSEE, ABD
Examiner
ART UNIT 2133



9/16/06



GUY LAMARRE
PRIMARY EXAMINER